

What is claimed is:

1. A method using a computer system, which includes a data mart with internal data
5 from one or more data sources and external data from one or more data sources, and one or more
software modules, the method generating alerts related to event(s) and/or impact of the event(s)
relevant to the procurement, sourcing, strategic sourcing, and/or sale of one or more items by an
enterprise, and comprising the steps of:

identifying, via the one or more software modules, one or more conditions of the internal
10 data, the external data, or both, and/or one or more calculations to be applied to the internal data,
the external data, or both, wherein the one or more conditions and the one or more calculations
are related to the one or more items and/or the procurement, sourcing, strategic sourcing, and/or
sale of the one or more items;

if at least one of the one or more conditions are satisfied and/or one of the one or more
15 calculations are applied, triggering, via the one or more software modules, one or more alerts for
the user(s); and

if at least one of the one or more alerts are triggered, providing as a result to the user, via
the one or more software modules, one or more computer-initiated options for executing one or
more action(s) with respect to the procurement, sourcing, strategic sourcing, and/or sale of the
20 one or more items.

2. The method of claim 1, wherein the internal data are selected from the one or
more data sources, consisting of suppliers' databases, contracts' databases, product quality
databases, internal parts databases, data marts, ERP systems, SCM systems, MRP systems,
and/or CRM systems.

25 3. The method of claim 2, wherein the internal data from the suppliers' databases
consist of one or more of the following: product catalog data, product specifications, part
numbers, prices, quantity, total net landed cost, delivery dates, lead time, PO histories,
manufacturer information, manufacturers of equivalent parts, supplier information, suppliers of
equivalent parts, current sales offers, past sales offers, availability, class of equivalent parts, class
30 of upgrade parts, standard industry categories, classes of parts that are equivalent to said

component for certain specified applications, client inventories, distributor data, retailer data, transportation schedules, distribution schedules, warehouse locations, supply inventories, supply forecasts, inventory targets, contract terms, contract prices, sales targets, fill rates, just-in-time (JIT) reports, supplier ratings, Vendor Managed Inventory (VMI) data, market data, industry data, product reviews, product launch information, supplier locations, and/or shipping locations.

4. The method of claim 2, wherein the internal data from the contracts databases consist of one or more of the following: product specifications, part numbers, prices, custom pricing, total net landed cost, delivery schedules, allocation terms, manufacturer information, contract terms, contract amendments, contract availability, company policies, and/or target number of units.

5. The method of claim 2, wherein the internal data from the product quality databases consist of one or more of the following: product specifications, part numbers, prices, total cost, quality metrics, internal reports, product change requests, warranty information, manufacturer information, manufacturer of equivalent parts, measurement standards, supplier information, suppliers of equivalent parts, availability, class of equivalent parts, class of upgrade parts, class of downgrade parts, standard industry categories, classes of parts that are equivalent to said component for certain specified applications, client inventories, and/or product reviews.

6. The method of claim 2, wherein the internal data from the internal parts databases consist of one or more of the following: parts catalogs, part numbers, product specifications, prices, total net landed cost, availability, manufacturer information, manufacturers of equivalent parts, supplier information, suppliers of equivalent parts, class of equivalent parts, class of upgrade parts, class of downgrade parts, classes of parts that are equivalent to said component for certain specified applications, spare parts inventories, supply inventories, supply forecasts, inventory targets, fill rates, just-in-time (JIT) reports, Vendor Managed Inventory (VMI) data, product reviews, supplier ratings, manufacturer ratings, and/or contract terms.

7. The method of claim 2, wherein the internal data from the data marts consist of one or more of the following: product specifications, manufacturer information, manufacturers of equivalent components, supplier information, suppliers of equivalent components, upgrades of components, downgrades of components, prices, current sales offers, past sales offers,

availability, total net landed cost, EOL information, part numbers, part catalogs, class of equivalent parts, class of upgrade parts, class of downgrade parts, standard industry categories, classes of parts that are equivalent to said component for certain specified applications, news reports, market reports, industry bulletins, daily news broadcasts, emergency broadcasts, trade journals, product reviews, supplier ratings, product launch information, delivery dates, supplier locations, shipping locations, weather reports, historical weather data, geographical reports, transportation reports, traffic reports, contract prices, sales targets, fill rates, JIT reports, company policies, manufacturer directories, retailer directories, client account information, spare parts inventories, supply inventories, supply forecasts, inventory targets, fill rates, JIT reports, VMI data, product reviews, supplier ratings, manufacturer ratings, contract terms, contract adjustments, and/or customized data based on the integration of internal data and external data.

8. The method of claim 2, wherein the internal data from the ERP systems consist of one or more of the following: costs, assets, capital equipment data, PO's, demand forecasts, ownership status, purchasing records, stockroom inventories, order processing data, ledgers, product information, manufacturer information, distributor information, retailer information, supply inventories, supply forecast, inventory targets, contract terms, contract prices, sales targets, fill rates, JIT reports, part numbers, supplier ratings, VMI data, stockroom inventories, and/or ERP planning data.

9. The method of claim 2, wherein the internal data from the SCM systems consist of one or more of the following: on-hand inventories, order processing, event management, costs, assets, data about transport networks, VMI data, key performance indicators, material flows, inventory control reports, new product launches, new customer segments, facility locations, warehouse locations, suppliers, manufacturers, distributors, forecasts, promotions, product specifications, product life cycles, product obsolescence, product profiles, revenues, sales objectives, supplier selection criteria, sourcing, ordering, invoicing, delivery schedules, bid prices, ask prices, service levels, production schedules, material and constraints capacity, BOMs, manufacturing data, collaboration data, inventory levels, allocation and planning data, confirmation dates, product allocation data, product demand data, due dates, carriers, tariffs, transportation data, shipping routes, handling capacities, shipping schedules, prices, equipment status, delivery logs, event tracking data, weather, purchase history, current units in inventory,

inventory logs, current days of supply, demand forecasts, inventory targets, percent deviation from target, location breakdowns, ownership status, and/or SCM planning data.

10. The method of claim 2, wherein the internal data from the MRP systems consist of one or more of the following: PO's, work orders, BOMs, routing and resource data, project structures, asset structures, claims management data, order changes, engineering changes, production schedules, production orders, product and asset life cycles, costs, margins, revenues, status reports, project plans, product specifications, parts, maintenance schedules, product performance data, upgrade data, refurbishment data, backlog data, hazardous materials management information, MSDS datasheets, product safety information, and/or MRP planning data.

11. The method of claim 2, wherein the internal data from the CRM systems consist of one or more of the following: profits, billing, contracts, sales activity data, contact management data, customer segmentation data, product and services profiles, marketing plans, POs, order tracking data, order acquisition data, customer address directories, customer preferences, customer site information, vital customer data, customer service management data, field service data, order life cycle process, and/or CRM planning data.

12. The method of claim 2, wherein the internal data are derived from non-electronic sources.

13. The method of claim 1, wherein the external data are selected from the one or more data sources, consisting of suppliers, vendors, product databases, electronic catalogs, online marketplaces, subscription sources, and/or news sources.

14. The method of claim 13, wherein the external data from the suppliers consist of one or more of the following: product catalog data, prices, quantity, availability, product specifications, delivery date, supplier location, shipping locations, total net landed cost, current sales offers, past sales offers, and/or lead time.

15. The method of claim 13, wherein the external data from the vendors consist of one or more of the following: product catalog data, prices, quantity, availability, product specifications, delivery date, vendor location, shipping locations, total net landed cost, current sales offers, past sales offers, and/or lead time.

096275-0800
T-06080-5-2660

16. The method of claim 13, wherein the external data from the product databases consist of one or more of the following: product catalog data, product name, product description, product specifications, design schematics, manufacturers, manufacturer information, manufacturer specifications, part numbers, End of Life (EOL) information, class of equivalent parts, class of upgrade parts, standard industry categories, classes of parts that are equivalent to said component for certain specified applications, and/or links to manufacturer's data sheets.

17. The method of claim 13, wherein the external data from the electronic catalogs consist of one or more of the following: product specifications, manufacturer information, manufacturers of equivalent components, supplier information, suppliers of equivalent components, prices, current sales offers, past sales offers, availability, EOL information, part numbers, class of equivalent parts, class of upgrade parts, standard industry categories, and/or classes of parts that are equivalent to said component for certain specified applications.

18. The method of claim 13, wherein the online marketplace includes private exchange, public exchanges, third party exchanges, consortia-led exchanges, information hubs, and/or electronic auctions.

19. The method of claim 18, wherein the external data from the online marketplaces consist of one or more of the following: product specifications, manufacturer information, manufacturers of equivalent components, supplier information, suppliers of equivalent components, prices, current sales offers, past sales offers, availability, EOL information, part numbers, class of equivalent parts, class of upgrade parts, standard industry categories, and/or classes of parts that are equivalent to said component for certain specified applications.

20. The method of claim 13, wherein the external data from the subscription sources consist of one or more of the following: product specifications, manufacturer information, manufacturers of equivalent components, supplier information, suppliers of equivalent components, upgrades of components, downgrades of components, prices, current sales offers, past sales offers, availability, total net landed cost, EOL information, part numbers, class of equivalent parts, class of upgrade parts, standard industry categories, classes of parts that are equivalent to said component for certain specified applications, news reports, market reports, industry bulletins, daily news broadcasts, emergency broadcasts, trade journals, product reviews,

supplier ratings, product launch information, delivery dates, supplier locations, shipping locations, weather reports, historical weather data, geographical reports, transportation reports, and/or traffic reports.

21. The method of claim 13, wherein the external data from the news sources consist of one or more of the following: product specifications, manufacturer information, manufacturers of equivalent components, supplier information, suppliers of equivalent components, upgrades of components, downgrades of components, prices, current sales offers, past sales offers, availability, total net landed cost, EOL information, part numbers, class of equivalent parts, class of upgrade parts, standard industry categories, classes of parts that are equivalent to said component for certain specified applications, news reports, market reports, industry bulletins, daily news broadcasts, emergency broadcasts, trade journals, product reviews, supplier ratings, product launch information, delivery dates, supplier locations, shipping locations, weather reports, historical weather data, geographical reports, transportation reports, and/or traffic reports.

22. The method of claim 13, wherein the external data are derived from non-electronic sources.

23. The method of claim 1, wherein the internal data are extracted from the one or more data sources in a plurality of formats requiring or not requiring transformation.

24. The method of claim 23, wherein the plurality of formats consists of XML and/or Java.

25. The method of claim 1, wherein the external data are extracted from the one or more data sources in a plurality of formats requiring or not requiring transformation.

26. The method of claim 25, wherein the plurality of formats consists of one or more of the following: XML, Java, flat files, CSV, and/or spreadsheets.

27. The method of claim 1, wherein the internal data can be pre-determined according to a plurality of user-specified inputs.

28. The method of claim 1, wherein the one or more of the software modules automatically incorporate the internal data and the external data into the next invocation of the one or more software modules.

29. The method of claim 1, wherein the internal data are extracted from the one or more data sources in real time.

30. The method of claim 1, wherein the external data are extracted from the one or more data sources in real time.

31. The method of claim 1, wherein the one or more alerts are comprised of individual rules or a set of rules, with conditions and actions.

32. The method of claim 31, wherein the individual rules or the set of rules have the following rule syntax: IF condition THEN action ELSE action.

33. The method of claim 31, wherein the set of rules is comprised of two or more rules, and is computed and evaluated as a group.

34. The method of claim 33, wherein the two or more rules are subject to partial or complete ordering to specify the precedence among the two or more rules, wherein the precedence can be used to mitigate conflicts between the two or more rules for a given matching condition.

35. The method of claim 32, wherein the individual rules or the set of rules are used as a general method for the user to define one or more automated actions or one or more semi-automated actions in response to a given matching condition, wherein the one or more automated actions or the one or more semi-automated actions are relevant to the procurement, sourcing, strategic sourcing, and/or sale of one or more items by an enterprise.

36. The method of claim 1, wherein the one or more conditions are logical expressions that include one or more variables, one or more values for the one or more variables, and one or more operators.

37. The method of claim 36, wherein the one or more variables and/or the one or more values for the one or more variables range over the internal data, the external data, or both.

38. The method of claim 36, wherein the one or more operators consist of the following: +, -, x, /, <, <=, >, >=, =, not equal functions, contains, start-with, ends-with, logical operators (AND, OR, NOT), and other system-defined or user-defined operators and functions.

39. The method of claim 1, wherein the one or more conditions are user-defined
5 conditions.

40. The method of claim 1, wherein the one or more conditions are checked and/or the one or more calculations are performed by the system continuously, randomly, at intervals set by the user, at intervals set by the computer system, or after the triggering of one or more additional alerts.

41. The method of claim 1, wherein the one or more action(s) consist of one or more
10 of the following: generating one or more reports, launching one or more analytics, invoking one or more particular software modules, sending the one or more alerts to the user, storing additional data in the data mart, passing the one or more alerts to another computer system, passing the internal data and/or the external data to another computer system, and executing one or more specified action(s).

42. The method of claim 41, wherein the one or more reports consist of one or more
of the following: performance of the supplier over time, lead time organized by supplier and part, contract lists with purchase orders, supplier spending, supplier performance index and parts shipped, comparison of contract price to invoice price, comparison of price across suppliers and market price, cost of parts against contracts, price history of parts, list of parts in short supply
20 with information on approved suppliers and corresponding lead time, list of alternate suppliers, list of parts in excess, list of potential buyers in excess, list of parts and sub-assemblies impacted.

43. The method of claim 41, wherein the one or more analytics consist of one or more
of the following: supplier allocation optimization, production change modeling, component
25 BOM allocation, and supplier performance index.

44. The method of claim 1, wherein the one or more alerts result in one or more actions that can be executed automatically.

45. The method of claim 1, wherein the one or more alerts result in one or more actions that can be executed after the user's approval.

46. The method of claim 1, wherein the one or more actions include any action that can be performed by the computer system.

5 47. The method of claim 1, wherein the step of executing the one or more actions includes actions or sets of actions that are executed automatically, after approval of one or more users, after approval of a subset of the one or more actions.

48. The method of claim 47, wherein the actions or sets of actions that are executed after the approval of one or more users can be further enhanced by the one or more users.

10 49 The method of claim 1, wherein the one or more alerts are specified programmatically or via one or more user interfaces.

50. The method of claim 1, wherein the one or more alerts include features that can be modified by the user or by the system, wherein the features consist of one or more of the following: priority, status, sender, receiver(s), date created, date mailed, and a description of each alert and/or feature, wherein the receiver(s) are the party to which the actions of the one or more alerts are directed.

51. The method of claim 50, wherein the features can be modified by the user with a plurality of functions, consisting of one or more of the following: creating, viewing, editing, saving, deleting, enabling, and disabling of the features.

20 52. The method of claim 50, wherein the description of each feature consists of what the feature is used for, which values for the features are optional, which values for the features are allowable, and/or if one or multiple values can be entered.

53. The method of claim 52, wherein the description is a system-defined or user-defined description, wherein the user-defined description includes creating, viewing, editing, 25 saving, deleting, enabling, and disabling of the description.

54. The method of claim 50, wherein the descriptions of each alert and/or feature appear in pop-up windows in the user interface.

64. The method of claim 63, wherein the pre-specified alerts can be edited, saved, deleted, enabled and disabled.

65. The method of claim 64, wherein the pre-specified alerts can be managed by one or more particular users.

5 66. The method of claim 65, wherein the one or more particular users can manage the pre-specified alerts with or without an alert manager via a plurality of functions, consisting of one or more of the following: creating, viewing, editing, saving, deleting, enabling, and disabling of the pre-specified alerts.

10 67. The method of claim 66, wherein the viewing of the pre-specified alerts includes arranging the pre-specified alerts in one or more lists.

68. The method of claim 67, wherein the pre-specified alerts in the one or more lists may be sorted for viewing by the user according to features that can be modified by the user or by the system, wherein the features consist of one or more of the following: priority, status, sender, receiver(s), date created, date mailed, and a description of each alert and/or feature, wherein the receiver(s) are the party to which the actions of the one or more alerts are directed.

15 69. The method of claim 68, wherein the receiver(s) can be one or more individual users, groups of users, teams, departments, divisions, business units inside the enterprise, business units outside the enterprise, business units both inside and outside the enterprise, corporate partners, a specified class of users, an arbitrary class of users, and/or one or more devices.

20 70. The method of claim 63, wherein the pre-specified alerts are restricted to one or more particular users, who have a specified status, priority, and/or password in order to view and/or modify the pre-specified alerts.

25 71. The method of claim 63, wherein the pre-specified alerts include descriptions explaining what each pre-specified alert is used for.

72. The method of claim 71, wherein the descriptions may appear in a pop-up window in the user interface.

0992795
54622660
T06030" 54622660

73. The method of claim 70, wherein the one or more particular users can collaborate by sharing the pre-specified alerts across one or more groups, wherein the one or more groups consist of teams, groups, departments, divisions, business units inside the enterprise, business units outside the enterprise, business units both inside and outside the enterprise, corporate partners, a specified class of users, and/or an arbitrary class of users.

74. The method of claim 1, wherein the step of executing the one or more actions includes automatically invoking one or more of the software modules with partial or complete instantiation, wherein the partial or complete instantiation specifies all or part of the necessary input for performing a task with the one or more software modules.

75. The method of claim 74, wherein the automatically invoking one or more of the software modules with partial or complete instantiation is the result of one or more conditions that the computer system determines merit invocation of the one or more software modules.

76. The method of claim 74, wherein the automatically invoking one or more of the software modules with partial or complete instantiation is accompanied by a representation of one or more alerts that caused the module to be invoked.

77. The method of claim 74, wherein the automatically invoking one or more of the software modules with partial or complete instantiation is accompanied by a representation of the steps that caused the module to be invoked.

78. The method of claim 74, wherein the automatically invoking one or more of the software modules occurs with one or more degrees of instantiation, wherein the one or more degrees of instantiation are customized according to user specifications.

79. The method of claim 74, wherein the automatically invoking one or more of the software modules occurs with one or more levels of user input.

80. The method of claim 1, wherein the one or more alerts are assigned a priority status from a priority list.

81. The method of claim 80, wherein the priority list is pre-specified or system defined.

82. The method of claim 80, wherein the priority list is user-defined.

83. The method of claim 1, wherein the one or more alerts result in actions that consist of one or more of the following: messages and/or other types of communication data from e-mails, electronic messaging, pagers, voice mail, answering machine messages, telephone calls, teleconferencing messages, web pages, and/or web page links.

5 84. The method of claim 1, wherein the one or more alerts are user-defined alerts, wherein the user-defined alerts are specified by a user, who either defines the one or more conditions that generate the alert or who selects and/or further specifies the one or more alerts from a pre-defined list of alerts.

10 85. The method of claim 1, wherein the step of executing the one or more action(s) consists of one or more of the following actions: sending a notification by e-mail; sending a message to a telephone, cellular phone, or pager; adding data to the data mart; adding data to any of data sources that contain the internal data; adding data to any of data sources that contain the external data; creating a new alert that is automatically added to the list of alerts provided for the user; creating a new alert that is added to the list of alerts provided for the user after receiving the user's permission; generating a document that can be passed as input to any of data sources that contain the internal data; generating a document that can be passed as input to any of data sources that contain the external data; generating a document that can be passed as output to any of data sources that contain the internal data; generating a document that can be passed as output to any of data sources that contain the external data; and/or triggering the one or more software modules to alert the user with pre-specified messages customized by the user.

15 20 86. The method of claim 1, wherein the one or more alerts are owned by one or more individual users, groups of users, teams, departments, divisions, business units, corporate partners, a specified class of users, an arbitrary class of users, wherein the owner of the one or more alerts specifies an alert, accesses the specification of an alert, modifies the specification of an alert, shares the specification of an alert of with another user or plurality of users, and/or specifies the receiver(s) of an alert, wherein the receiver(s) are the party to which the action(s) of the one or more alerts are directed.

87. The method of claim 1, wherein the one or more alerts result from an event consisting of one or more of the following: a lead time is greater than a certain specified limit for

1005089" 5742660
45
20
a supplier; a lead time is greater than a certain specified limit set by a supplier; a PO is placed with a non-qualified supplier; a number of lots delivered is less than the number of lots on the PO; a number of lots delivered is greater than the number of lots on the PO; a price for a given component is greater than or less than a given percentage level from the contract price; a
5 component inventory is greater than a certain specified threshold level; a number of lots accepted is less than a certain limit set for a supplier; a number of defects per lot is greater than a given limit; a new supplier achieves qualified status within a certain part family; an established supplier loses "approval" status; a component needed by a design group has no known supplier; a PO is placed for a component with a different supplier instead of with a standard supplier; a new part
10 that a supplier typically supplies is added to the BOM; a part specification is updated for a part in an existing BOM and requires a change in supplier manufacturing processes; a supplier finished goods inventory for a part that is being supplied is less than a certain level; and a supplier shipment date is beyond the date when the lot can arrive at the manufacturer's location.

88. The method of claim 1, wherein the one or more alerts result in one or more of the following actions: notify procurement organization(s) when components that currently do not exist in the part/supplier database are added to a BOM; send alert and list out components in the BOM that have lead-times greater than a specified lead-time limit; notify user(s) of procurement product and/or suppliers of any component being replaced for a BOM on a released model; notify user(s) of procurement product of a supplier-initiated delay in shipment; notify user(s) regarding a change in the production schedule; notify user(s) when one or more designers select a new component (which is currently not in the parts/supplier database) that belongs to the same category the supplier currently supplies; notify user(s) when a lot supplied by the supplier is rejected; notify user(s) when a designer makes an engineering change on a component for an existing BOM; notify user(s) when the inventory for the component supplied by the supplier
25 drops below a certain minimum threshold; notify user(s) when the supplier rating drops below a certain level.

89. The method of claim 1, wherein the user(s) include suppliers and buyers.

90. The method of claim 89, wherein the one or more alerts for suppliers result from an event consisting of one or more of the following: a number of defects per lot is greater than

the maximum specified in the contract(s); an average number of defects per lot is greater than the maximum specified in the contract(s); a supplier's SPI index is greater than the maximum specified in the contract; a lead time of the supplier's shipment is greater than the user-specified maximum; an average lead time of the supplier's shipments is greater than the user-specified maximum; a PO delivery date is greater than the PO due date by a user-specified number of days; a quantity delivered is less than the quantity ordered; an average quantity delivered is less than the quantity ordered; a total dollar amount spent within a contract is greater than the amount specified in the contract; and an average total dollar amount spent within the contract(s) is greater than the amount specified in the contract(s).

91. The method of claim 89, wherein the one or more alerts for buyers result from an event consisting of one or more of the following: a PO price is different from the contract price; a spot market price for a part number, after adjustment, is less than the contract price; an inventory of a part is greater than the user-specified maximum, less than the user-specified minimum, or both; a part number ordered is already above the user-specified maximum inventory level; and a forecast for a BOM exceeds a user-specified percentage within a user-specified time period.

92. The method of claim 1, wherein the computer system provides a method for collaboration between one or more individual users, groups of users, teams, departments, divisions, business units inside the enterprise, business units outside the enterprise, business units both inside and outside the enterprise, corporate partners, a specified class of users, an arbitrary class of users, and/or one or more devices.

93. The method of claim 92, wherein the method for collaboration provides the capability of sharing information about the procurement, sourcing, strategic sourcing, and/or sales activities of one or more items with other user(s) of computer systems.

94. The method of claim 92, wherein the method for collaboration includes one or more of the following tasks: viewing the inventory of a part or plurality of parts provided by a supplier in the inventory system of an enterprise; viewing BOMs to see if any component should be supplied to a manufacturer that currently is not included in the part/supplier database, in addition to viewing any changes in the BOM on released models; viewing new components required by the manufacturer for bidding purposes; viewing all POs for components that have

been fulfilled by a supplier or plurality of suppliers; viewing the current supplier rating status as viewed by the manufacturer based on delivery and quality performance ratings, in addition to viewing the ratings of similar suppliers as established by the manufacturer; viewing the production schedule for components that are currently being planned for production purposes; and viewing any published documents attached to a component record in the part/supplier database.

95. The method of claim 93, wherein the method for collaboration shares the internal data, the external data, or both in one or more formats.

96. The method of claim 95, wherein the one or more formats include data views, files, and reports.

97. The method of claim 96, wherein the reports can be generated based on the alerts and managed by groups of users, wherein the groups of users consist of one or more of the following: teams, departments, divisions, business units inside the enterprise, business units outside the enterprise, business units both inside and outside the enterprise, corporate partners, a specified class of users, and an arbitrary class of users.